

Two New Species of the Genus *Acropyga* (Hymenoptera, Formicidae) from Taiwan and Japan

Mamoru TERAYAMA

Department of Biology, College of Arts and Sciences, University of Tokyo,
Komaba, Meguro-ku, Tokyo, 153 Japan

Abstract Two new species of the ant genus *Acropyga*, *A. (Atopodon) baodaoensis* sp. nov. from Taiwan and *A. (At.) nipponensis* sp. nov. from Japan, are described and illustrated.

The ant genus *Acropyga* is widely spread through temperate to tropical zone of the world. This genus is characteristic with 7–11-segmented antennae, 1–2-segmented maxillary and 3-segmented labial palpi, and divided into 4 subgenera, *Acropyga s. str.*, *Atopodon*, *Rhizomyrma*, and *Malacomyrma*. The subgenus *Atopodon* is restricted to Southeast Asia, including 6 known species.

FÖRCEL (1913) established the subgenus, describing 3 species, *A. termitobia*, *A. butteli*, and *A. inezae*. In 1915, he described 4th species, *A. amblyops*, and EMERY (1922) and KARAWAJEW (1935) added *A. ambigna* and *A. distinguenda*, respectively.

In the present paper, the author describes 2 new species of *Atopodon* from Taiwan and Japan.

Acropyga (Atopodon) baodaoensis sp. nov.

(Figs. 1–13)

Worker. head length (HL) 0.63–0.65 mm; head width (HW) 0.55–0.60 mm; scape length (SL) 0.43–0.45 mm; cephalic index (CI; $HW \times 100/HL$) 87–95; scape index (SI: $SL \times 100/HW$) 74–81; WEBER's length of alitrunk (WL) 0.55–0.65 mm; alitrunk width (AW) 0.38–0.40 mm; petiole length (PL) 0.10–0.13 mm; petiole height (PH) 0.23–0.27 mm; dorsal petiole width (DPW) 0.13–0.15 mm; total length (TL) 1.9–2.2 mm. (Six individuals were measured.)

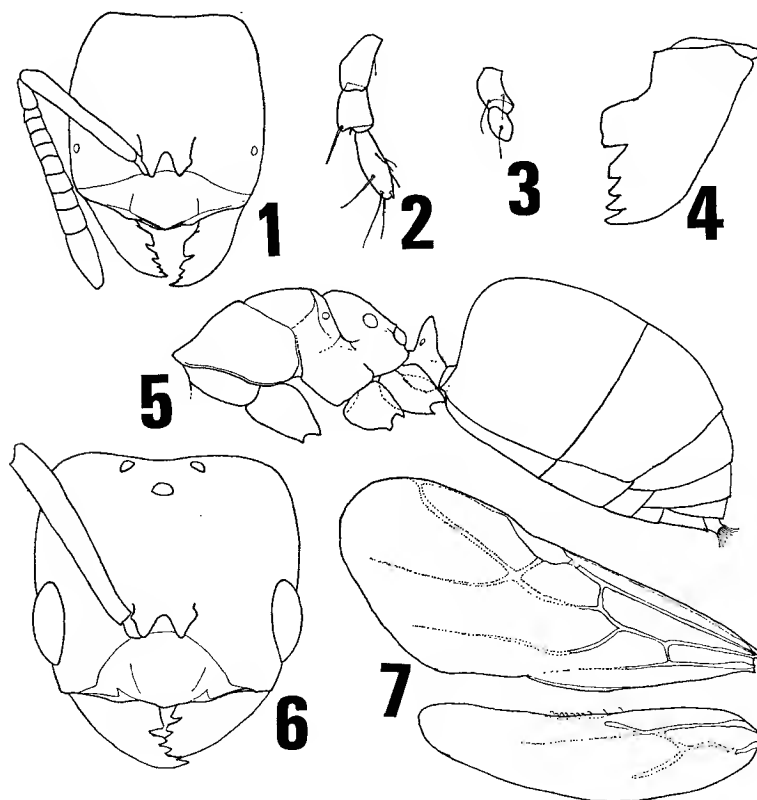
Head as in Fig. 1, slightly longer than wide, with slightly convex sides and shallowly concave occipital border. Mandibles subtriangular with 5 teeth; apical 3 smaller and pointed; 4th larger than apical 3, tip more rounded; basal tooth heavy and truncate, with straight opposable surface. Eyes small, 0.025 mm in maximum diameter, situated laterally about $0.75 \times$ the distance from occipital corner to anterior cephalic corner. Antennae 11-segmented; scape almost reaching median occipital border; 10th segment as long as broad; last segment $2.7 \times$ as long as broad. Anterior border of clypeus convex; median carina of clypeus distinctly raised. Frontal area distinct, subtriangular. Maxillary palpi 2-segmented, in a ratio of length from

the base 3 : 2; labial palpi 3-segmented, in a ratio of length about 3 : 2 : 4.

General form of alitrunk, petiole, and gaster as in Fig. 5. Alitrunk convex in profile; propodeum with sloping declivity; pro-mesonotal and mesonotal-propodeal suture distinct. Viewed from above, pronotum $2.0\times$ as broad as long; propodeum broader than long. Petiole rather compressed antero-posteriorly; petiolar node thin, anterior face rather perpendicular, slightly curved posteriorly, posterior face slightly convex, sloping to the gaster. Subpetiolar process large, rounded.

Head, alitrunk, gaster shagreened; propodeum less shagreened and more shining. Mandibles shining with scattered shallow punctures. Clypeus sparsely punctate. Head and scapes with numerous suberect short hairs; anterior border of clypeus with 5 long hairs medially; dorsum of petiole with 3 to 4 distinct hairs.

Color pale yellow; vertex with large dark subtriangular spot; mandibles slightly reddish; mandibular teeth reddish brown.



Figs. 1-7. *Acropyga (Atopodon) baodaensis* sp. nov. (worker and female).—1, Worker, head, full face view; 2, worker, labial palp; 3, worker, maxillary palp; 4, worker, mandible; 5, worker, alitrunk, petiole and gaster, lateral view; 6, female, head, full face view; 7, female, fore and hind wings.

Female. HL 0.68–0.70 mm; HW 0.68–0.70 mm; SL 0.55–0.58 mm; CI 100; SI 81–83; WL 1.00–1.03 mm; AW 0.70–0.73 mm; PL 0.10 mm; PH 0.28–0.29 mm; DPW 0.23–0.25 mm; fore wing length (FWL) 3.3–3.4 mm; TL 3.1–3.3 mm. (Three individuals were measured.)

Head square as in Fig. 6. Eyes prominent, approximately 0.25 mm in maximum diameter. Median ocellus about 0.06 mm in diameter; lateral ocelli 0.15 mm in distance. Mandibles with 5 teeth, basal tooth as in workers. Antennae 11-segmented; scapes long, exceeding median occipital border; 2nd–8th segments wider than long respectively; 9th and 10th each as broad as long; terminal segment $2.3\times$ as long as broad. Maxillary palpi 2-segmented; labial palpi 3-segmented; general form as in workers.

Scutellum convex in lateral view; propodeum rather straight. Petiole as in that of worker. Wing venation as in Fig. 7.

Head and gaster shagreened; alitrunk and petiole less shagreened than head and gaster; lower 1/2 of petiole almost smooth and shining. Body with yellowish hairs; scutellum with a pair of long erect hairs, which are about 0.15 mm in length.

Color brown; alitrunk lighter than head and gaster. Mandibular denticles reddish brown; vertex with dull black triangular spot which is enclosed by ocelli.

Male. HL 0.48–0.55 mm; HW 0.50–0.55 mm; SL 0.35–0.38 mm; CI 100–104; SI 69–70; WL 0.80–0.83 mm; AW 0.55–0.57 mm; PL 0.10–0.13 mm; PH 0.28 mm; DPW 0.25 mm; FWL 2.4–2.5 mm; TL 1.9–2.0 mm. (Three individuals were measured.)

Head as in Fig. 8. Eyes large and well convex, approximately 0.19 mm in maximum diameter. Mandibles with 4 teeth; apical 3 well developed, triangular; basal blunt, subrectangle-shaped. Antennae 12-segmented; 2nd segment $3.0\times$ as long as broad; 3rd–11th segments wider than long respectively; terminal segment $3.0\times$ as long as broad. Ratio of length of each segment from 10th to apical segment, 1 : 1 : 4. Maxillary palpi 2-segmented, slender, ratio of length from the base, 5 : 6; labial palpi 3-segmented.

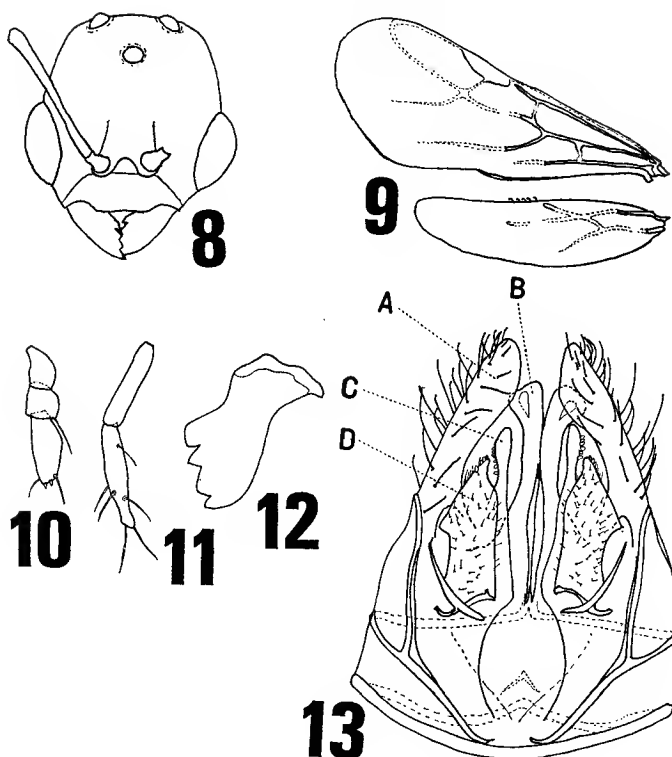
Dorsal outline of alitrunk round; petiolar node thin. Wing venation as in Fig. 9 and general form of genitalia as in Fig. 13.

Body surface subopaque with shallow punctures sparsely; mesoscutum and scutellum less punctated; propodeal declivity shining. Pubescence abundant on the whole body; mandibles with longer hairs.

Color fuliginous brown; blackish in the area enclosed by ocelli, and darker in mesoscutum. Antennal 2nd–11th segments yellowish, terminal segment darker. Mandibular denticles reddish brown; legs pale cream yellow.

Holotype: worker, 12. VIII. 1980, Nanshanchi (alt. ca. 800 m), Nanfen Cun, Ren'ai Xiang, Nantou Hsien, Taiwan, M. TERAYAMA leg.

Paratypes: 11 workers, 4 alate females, 3 males (from the same nest as holotype); 6 workers, 1 dealate female, 4 alate females, 2 males, 13. VIII. 1980, Nanshanchi, Nanfen Cun, Ren'ai Xiang, Nantou Hsien, Taiwan, M. TERAYAMA leg.



Figs. 8–13. *Acropyga (Atopodon) baodaoensis* sp. nov. (male).—8, Head, full face view; 9, fore and hind wings; 10, labial palp; 11, maxillary palp; 12, mandible; 13, genitalia (A, paramere; B, aedeagus; C, digitus; D, cuspis).

The holotype is preserved in the collection of the National Institute of Agro-Environmental Sciences, and the paratypes in the collection of mine, the Taiwan Agricultural Research Institute, and the Osaka Museum of Natural History.

Remarks. Judging from the original description, this species is closely related to *A. distinguenda* from China, Tonkin in having the subrectangular form of the basal tooth and the tooth number (5) of the mandibles (*A. ambigua* with 6 teeth and the other species with the more or less half-circular basal tooth). *A. distinguenda* is distinguished from the present new species by the larger size (TL of worker 2.5–3 mm), the more projecting apical teeth of the mandibles, and the more convex mesonotum of worker.

Acropyga (Atopodon) nipponensis sp. nov.

(Figs. 14–18).

Worker. HL 0.58–0.60 mm; HW 0.45–0.48 mm; SL 0.38–0.39 mm; CI 76–

80; SI 81–84; WL 0.50–0.53 mm; AW 0.33–0.34 mm; PL 0.13–0.15 mm; PH 0.25 mm; DPW 0.14 mm; TL 1.8–1.9 mm. (Five individuals were measured.)

Head slightly longer than wide, with slightly convex sides and rather straight occipital border. Mandibles subtriangular with 5 teeth; apical 3 smaller and pointed; 4th larger than apical 3; basal tooth heavy and subrectangular. Eyes minute, consist of 1 or 2 indistinct facets, approximately 0.013 mm in maximum diameter, situated laterally about $0.70\times$ the distance from occipital corner to anterior cephalic corner. Antennae 11-segmented; scape short, not reaching the occipital border; 3rd–9th segments broader than long respectively; 10th segment as long as broad; terminal segment $2.3\times$ as long as broad. Clypeus with distinctly raised median carina, anterior border convex. Maxillary palpi 2-segmented, in a ratio of length from the base, 3 : 2; labial palpi 3-segmented, in a ratio of length from the base, 2 : 1 : 2.

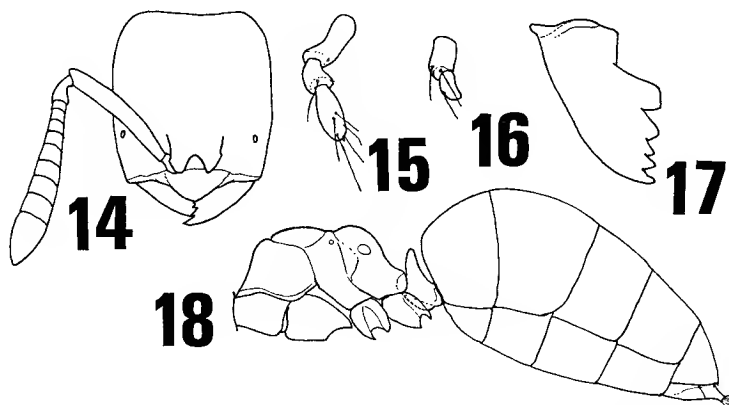
General form of alitrunk, petiole, and gaster as in Fig. 18. Dorsal outline of pro- and mesonotum convex in profile; propodeum with sloping declivity.

Head and gaster shagreened; alitrunk less shagreened and more shining. Mandibles and clypeus shining with scattered shallow punctures. Head and scapes with numerous suberect short hairs; Anterior border of clypeus with 5 long hairs medially; pronotum with 2 or 3 pairs of long erect or suberect hairs, mesonotum with 2 pairs of long hairs present.

Color pale yellow, gaster more whitish than head or alitrunk. Mandibles reddish, mandibular teeth reddish brown.

Holotype: worker, 30. III. 1980, Noboritachi, Mikura-jima Is., Tokyo, Japan, K. MASUKO leg.

Paratypes: 9 workers (from the same nest as holotype); 5 workers, 3. VII.



Figs. 14–18. *Acropyga (Atopodon) nipponensis* sp. nov. (worker).—14, Head, full face view; 15, labial palp; 16, maxillary palp; 17, mandible; 18, alitrunk, petiole and gaster, lateral view.

1983, Honcha Pass, Amami-ōshima Is., Kagoshima Pref., Japan, M. TERAYAMA leg.; 1 worker, 15. III. 1980, Shinaha, Yoron-tō Is., Kagoshima Pref., Japan, M. TERAYAMA leg.; 1 worker, 10. I. 1983, Tancha, Motobu-machi, Okinawa-hontō, Okinawa Pref., Japan, K. KINOMURA leg.

The holotype is deposited in the collection of the National Institute of Agro-Environmental Sciences, and the paratypes are in the collection of mine and the Osaka Museum of Natural History.

Remarks. This species closely resembles *A. baodaoensis* sp. nov., but differing in the following characters: 1. Head smaller and narrower (HL 0.58–0.60 mm, HW 0.45–0.48 mm, CI 76–80), in *baodaoensis* as opposed to HL 0.63–0.65 mm, HW 0.55–0.60 mm, CI 87–95. 2. Eyes smaller, about 0.5× in maximum diameter of *baodaoensis*. 3. Scapes shorter, 0.38–0.39 mm in length (0.43–0.45 mm in *baodaoensis*). 4. Occipital border of head less convex. 5. Gaster more whitish than head or alitrunk (same color in *baodaoensis*).

Materials from Mikura-jima Is. were taken from under a stone on the floor of broad-leaved forest, with ant-attended mealybugs, which belong to a new species of the subfamily Rhizoecinae (Homoptera, Pseudococcidae) (TERAYAMA, in prep.).

Acknowledgements I wish to express my hearty thanks to Mr. Keiichi MASUKO, Tokyo Metropolitan University, who offered materials and information. I am also indebted to Mr. Kazuo OGATA, Kyushu University, for his reading and correcting the English of the manuscript of this paper.

References

- EMERY, C., 1925. Formicidae: Formicinae. *Genera Insectorum*, **183**: 1–302, 4 pls.
FOREL, A., 1913. Wissenschaftliche Ergebnisse einer Forschungsreise nach Ostindien, ausgeführt im Auftrage der Kgl. Preu. Akademie der Wissenschaften zu Berlin von H. v. BUTTEL-REEPEN. II. Ameisen aus Sumatra, Java, Malacca und Ceylon. Gesammelt von Herrn Prof. Dr. v. BUTTEL-REEPEN in den Jahren 1911–1912. *Zool. Jahrb., Syst.*, **36**: 1–148.
KARAWAJEW, W., 1935. Neue Ameisen aus dem Indo-Australischen Gebiet, nebst Revision einiger Former. *Treubia*, **15**: 57–117.